

# [PRACTICE]

## D6.11 VALIDATION AND INTEGRATION EXERCISES EVALUATION REPORT

*PRACTICE WP6 deliverable*

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**UNCLASSIFIED**

## 1. Executive Summary

The report at hand documents the overall evaluation of the three PRACTICE exercises held in Birmingham, UK, August 2013; Umeå/Sandö, Sweden, March/May 2104; and Pionki, Poland, April 2014 to support evaluation of different aspects of the PRACTICE Toolbox. The exercises were means of integrating and validating, in real environments, the improved concept, equipment and procedures. The exercises covered different conditions and challenges related to CBRN and were conducted by actual end-users in an international composition. Their views represented a significant added value for project conclusions.

Ethical consideration was a cornerstone in every exercise and an Ethics Advisory Panel was formed for each of the three exercises in order to ensure that the exercises were carried out in a manner that was ethically compliant. The ethical measures focused on data protection, health and safety, privacy, racial and sexual discrimination and ethical evaluation of the PRACTICE Toolbox training kit. Delegates from the Ethics Advisory Panels attended each exercises in order to carry out an on-site evaluation of ethical aspects. For each exercise an ethical evaluation document was established.

Evaluation data was collected in advance, during and after each exercise and included questionnaires, diagnostic tests, video-, GPS, and voice recording, observer protocols and debriefings. In addition, After Action Reviews (AAR) were undertaken with representatives of the participating First Responder organisations in order to present preliminary results and collect additional data. The evaluation process used a two level generic evaluation model with focus on measures of performance and measures of merit to enable analysing both tool performance and increase of societal ability.

The first exercise, ARDEN in Birmingham, UK, focused on communication with the public and public response in a CBRN incident. Collected data provided important insights into information needs by members of the public; emotional and behavioural responses to emergencies; as well as the drivers of public responses to CBRN incidents. ARDEN data also provided specific feedback for the development of communication manuals, in particular the manual for members of the public and for emergency professionals that will enable the researchers to further improve the performance of the communication tools. The obtained data indicated the following general results:

- public information needs differ at different stages of an event and – in some stages – diverge from what is predicted by some of the existing research, and
- public information and education manuals are more likely to be useful as a long-term education tools rather than as an on-site, during-emergency information tool to the affected public

The second exercise in Umeå/Sandö, Sweden, focused on the PRACTICE Toolbox training tool for basic CBRN knowledge and was set up as a case study where two different groups independently performed two similar exercises with a six week training period between the different occasions. The first training session was used to measure a performance baseline for each group and the second training session was used to measure improvement in performance after having used the training tool for approximately 20 hours. The obtained results indicated a low training effect in terms of Bloom's taxonomy. Consequently, the used training package seems to have had a weak impact on participants' degree of learning. The

most plausible explanation seems to be that the main training effect came from the experiences from the first exercise and the participants' subsequent in hindsight reflections. Important to notice is that the aim of the training package was on basic CBRN knowledge intended as being universal in character and not bound by distinctive national characteristics, while the results clearly indicate that the participants primarily searched for information related to their specific role. Even if hands on exercises are the preferred motor of learning for First Responders, such exercises are expensive; especially as CBRN cases will involve several different authorities and levels of societal resources. Consequently, the results stress the importance of low cost training facilitators which can support multi agency training and cooperation. The suggested PRACTICE toolkit seems to have the potential to fill such a function.

The third exercise held in Pionki, Poland, was the first occasion in which the integrated PRACTICE Toolbox was implemented. The task of assessing the performance of the Toolbox was a challenge. From a technical point of view, the system was still immature at the time of the exercise. The scenarios were in general unprepared events that started with an alarm and had a primary focus on First Responders' actions. Consequently, there were limited possibilities for exploration of the Toolbox' potential for the first three phases and the final recovery phase, of the PRACTICE five phase emergency cycle (Threat Assessment, Prevention, Preparedness, Response, and Recovery). Four different scenarios were conducted and generated a large amount of relevant and valuable data. To address the problem of the immature system outlined above, the assessment was based on a "peer review" observer approach in which the focus for the assessment was *potential for contribution* instead of *contribution to performance*. Observers represented a wide variety of perspectives and knowledge spanning from professional First Responders to world leading CBRN scientist. The obtained results indicated that in the absolute majority of cases the Toolbox is judged to have the potential to contribute to societal ability to a higher degree than existing solutions. This is especially the case for the strategic headquarter and the incident site while contributions to the EU headquarter level is, in general comparable to existing solutions, except regarding public care in which the assessment of contribution is more positive.

All in all, testing and validation through exercises was a success. Many of the tools have been improved following the exercises, based on stakeholder and First Responder feedback. Moreover, it should be noted that the validation exercises served a number of other purposes, which have helped the project and improved CBRN preparedness and resilience in Europe in many different ways. In total, more than 1500 people were involved in the exercises on four different locations in three different EU member states. Around 1000 participants have been First Responders, and additional 500 were volunteers, researchers and observers coming from all over Europe.